



U.S. Department of Energy
Office of River Protection

P.O. Box 450, MSIN H6-60
Richland, Washington 99352

0074187

OCT 18 2007

07-ESQ-171

Ms. Jane A. Hedges, Program Manager
Nuclear Waste Program
Washington State
Department of Ecology
3100 Port of Benton Blvd.
Richland, Washington 99354

RECEIVED
OCT 23 2007

EDMC

Dear Ms. Hedges:

SUBMITTAL OF HANFORD FACILITY RESOURCE CONSERVATION AND RECOVERY ACT (RCRA) PERMIT MODIFICATION NOTIFICATION FORM 24590-HLW-PCN-ENV-06-014

Reference: WA7890008967, "Dangerous Waste Portion of the Hanford Facility Resource Conservation and Recovery Act Permit for the Treatment, Storage, and Disposal of Dangerous Waste, Operating Unit 10, 'Waste Treatment and Immobilization Plant.'"

This letter transmits the Hanford Facility RCRA Permit Modification Notification Form 24590-HLW-PCN-ENV-06-014. The form describes a requested Class 1 modification to the Reference.

Modification Notification Form 24590-HLW-PCN-ENV-06-014 updates the Process Flow Diagram (24590-HLW-M5-V17T-P0001) for the High-Level Waste Receipt and Feed Preparation Systems found in Appendix 10.1 of the Reference. In accordance with the existing Bechtel National, Inc. (BNI) permitting process, the permit drawing identifies components that require independent design assessment and installation inspection per the Dangerous Waste Permit (DWP) and Washington Administrative Code requirements. Upon approval of the pending DWP modification, the BNI process will be revised to submit engineering source drawings.

If you have any questions, please contact me, or your staff may contact Lori A. Huffman, Office of Environmental Safety and Quality, (509) 376-0104.

Sincerely,

Shirley J. Olinger, Acting Manager
Office of River Protection

ESQ:LAH

Attachment

cc: See page 2

Ms. Jane A. Hedges
07-ESQ-171

-2-

OCT 18 2007

cc w/attach:

Administrative Record *4-0-8*
BNI Correspondence
Environmental Portal, LMSI

cc electronic:

B. Dubiel, BNI
W. S. Elkins, BNI
B. G. Erlandson, BNI
P. A. Fisher, BNI
J. S. Hill, BNI
S. Murdock, BNI
P. Peistrup, BNI
D. Becker, Ecology
B. Becker-Khaleel, Ecology (1 hard copy)
R. Biyani, Ecology
E. A. Fredenburg, Ecology
T. A. Williams, Ecology
S. A. Thompson, FHI
A. C. McKarns, RL
D. J. Sommer, SCS

cc w/o attach:

D. A. Klein, BNI
J. Cox, CTUIR
S. Harris, CTUIR
S. L. Dahl, Ecology
G. P. Davis, Ecology
G. Bohnee, NPT
K. Niles, Oregon Energy
R. Jim, YN

Attachment
07-ESQ-171

Hanford Facility RCRA Permit Modification Notification
Form 24590-HLW-PCN-ENV-06-014

Quarter Ending September 30,
2007

24590-HLW-PCN-ENV-06-014

Hanford Facility RCRA Permit Modification Notification Form**Part III, Operating Unit 10****Waste Treatment and Immobilization Plant**

Index

Page 2 of 3 Hanford Facility RCRA Permit, Operating Unit 10, Waste Treatment and Immobilization Plant
Update HLW Vitrification *Process Flow Diagram* HLW Receipt & Feed Preparation (System HCP, GFR, & HFP) in Appendix 10.1 of the Dangerous Waste Permit

Submitted by Co-Operator:

Reviewed by ORP Program Office:




D. A. Klein



Date



S. J. Olinger



Date

¹ Class 1 modifications requiring prior Agency approval.

² If the proposed modification does not match any modification listed in WAC 173-303-830 Appendix I, then the proposed modification should automatically be given a Class 3 status. This status may be maintained by the Department of Ecology, or down graded to a Class '1, if applicable.

Quarter Ending September 30,
2007

24590-HLW-PCN-ENV-06-014

Hanford Facility RCRA Permit Modification Notification Form											
Unit: Waste Treatment and Immobilization Plant		Permit Part & Chapter: Part III, Operating Unit 10									
<p><u>Description of Modification:</u></p> <p>The purpose of this Class 1 modification is to update the HLW Vitrification <i>Process Flow Diagram HLW Receipt & Feed Preparation (System HCP, GFR, & HFP)</i> in Appendix 10.1 of the Dangerous Waste Permit. The following permit Process Flow Diagram is submitted to replace the Diagram currently in Appendix 10.1.</p>											
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="4" style="padding: 2px;">Appendix 10.1</td> </tr> <tr> <td style="width: 15%; padding: 2px;">Replace:</td> <td style="width: 35%; padding: 2px;">24590-HLW-M5-V17T-P0001, Rev. 3</td> <td style="width: 15%; padding: 2px;">With:</td> <td style="width: 35%; padding: 2px;">24590-HLW-M5-V17T-P0001, Rev. 4</td> </tr> </table>				Appendix 10.1				Replace:	24590-HLW-M5-V17T-P0001, Rev. 3	With:	24590-HLW-M5-V17T-P0001, Rev. 4
Appendix 10.1											
Replace:	24590-HLW-M5-V17T-P0001, Rev. 3	With:	24590-HLW-M5-V17T-P0001, Rev. 4								
<p>The referenced Process Flow Diagram incorporates changes provided in applicable document change forms (DCNs) and changes associated with the resolution to comments on DCNs since the issuance of the last revision of the permitted drawing. This modification requests Ecology approval and incorporation into the permit, the specific changes to the Process Flow Diagram that is indicated by note 24, clouds, and revision triangles. Revisions are the result of ongoing design changes. The following identifies the significant types of changes on the attached drawings.</p>											
<p><u>24590-HLW-M5-V17T-P0001</u></p> <ul style="list-style-type: none"> Deleted Hold 3 Added, revised and changed notes, holds and, references Deleted product system design: Glass Formers Reagent System (GFR) mechanical handling equipment items [Agglomeration Equipment for HLW Melter 1 and 2 (GFR-MHAN-00004 and GFR-MHAN-00005)] Revised, GFR tanks (product systems) and connection inlet Revised Pretreatment off-sheet connection points and text Added note 17 Deleted Plant Wash and Disposal to overflows, Instrument Service Air to vessels and Anti-foam Reagent to vessels connections Changed Note 19 in vessels to Note 10 											
<p>The following is a list of outstanding change documents that have not been incorporated into this modification:</p> <p>None</p>											

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2007

24590-HLW-PCN-ENV-06-014

WAC 173-303-830 Modification Class: ^{1 2}	Class 1	Class ¹ 1	Class 2	Class 3
Please mark the Modification Class:	X			
<p>Enter Relevant WAC 173-303-830, Appendix I Modification citation number: A.1 and A.3</p> <p>Enter wording of WAC 173-303-830, Appendix I Modification citation:</p> <p>A.1 - Administrative and informational changes.</p> <p>A.3 - Equipment replacement or upgrading with functionally equivalent components (e.g., pipes, valves, pumps, conveyors, controls).</p> <p>In accordance with WAC 173-303-830(4)(d)(i), this modification notification is requested to be reviewed and approved as a Class 1 modification. WAC 173-303-830(4)(d)(ii)(A) states, "Class 1 modifications apply to minor changes that keep the permit current with routine changes to facility or its operation. These changes do not substantially alter the permit conditions or reduce the capacity of the facility to protect human health or the environment. In the case of Class 1 modifications, the director may require prior approval."</p>				
<p>Modification Approved: <input type="checkbox"/> Yes <input type="checkbox"/> No (state reason for denial)</p> <p><u>Reason for denial:</u></p>		<p>Reviewed by Ecology:</p>		
		<p>B. Becker-Khaleel Date</p>		

¹ Class 1 modifications requiring prior Agency approval.

² If the proposed modification does not match any modification listed in WAC 173-303-830 Appendix I, then the proposed modification should automatically be given a Class 3 status. This status may be maintained by the Department of Ecology, or down graded to a Class '1, if applicable.

PLANT ITEM NUMBER
DESCRIPTIONHFP-DMST-00004
MELTER 2
FEED VESSEL
DEMISTERHFP-PMP-00014/15
MELTER 2 FEED
AIR DISPLACEMENT
SLURRY (ADS) PUMPHFP-VSL-00006
MELTER 2 FEED
VESSELGFR-TK-00031
GLASS FORMER
MIXERHFP-PMP-00018A/B
MELTER 2 FEED PREP
VESSEL TRANSFER/
SAMPLE PUMPHFP-VSL-00005
MELTER 2 FEED
PREP VESSELHFP-DMST-00003
MELTER 2 FEED
PREP VESSEL
DEMISTERHFP-DMST-00001
MELTER 1 FEED
PREP VESSEL
DEMISTERHFP-VSL-00001
MELTER 1 FEED
PREP VESSELHFP-PMP-00005A/B
MELTER 1 FEED PREP
VESSEL TRANSFER/
SAMPLE PUMPGFR-TK-00025
GLASS FORMER
MIXERHFP-VSL-00002
MELTER 1 FEED
VESSELHFP-PMP-00001/2
MELTER 1 FEED
AIR DISPLACEMENT
SLURRY (ADS) PUMPHFP-DMST-00002
MELTER 1
FEED VESSEL
DEMISTER

NOTES:

- SEE DRAWING 24590-WTP-M5-V17T-P0001 FOR LEGEND AND SYMBOLS.
- MAJOR INDICATION AND CONTROL INSTRUMENTATION ONLY SHOWN.
- VALVES SHOWN ONLY TO INDICATE PROCESS INTENT.
- DELETED.
- DELETED.
- DELETED.
- THE ADS PUMPING RATE WILL BE MANUALLY ADJUSTED TO MAINTAIN APPROPRIATE PLENUM TEMPERATURES AND TO PROVIDE THE DESIRED GLASS PRODUCTION.
- DELETED.
- HLP08, HFP06, AND HFP03: PRETREATED HLW CONCENTRATE AND HLW MELTER FEED ARE NON-NEWTONIAN FLUIDS AND BEHAVE AS BINGHAM PLASTIC. REFER TO PHYSICAL AND RHEOLOGICAL PROPERTIES REPORT 24590-101-TSA-WOOD-0004-99-09, AND CALCULATION 24590-HLW-M4C-HFP-00001, FOR RHEOLOGY INFORMATION.
- INSTRUMENT AIR ADDED TO VESSELS THROUGH SPARGER FOR HYDROGEN MITIGATION AND BACK-UP MIXING.
- DELETED.
- DELETED.
- VESSEL TEMPERATURE WILL BE INDIRECTLY CONTROLLED VIA A TEMPERATURE CONTROL LOOP ON THE OVERALL COOLING WATER SYSTEM THAT WILL DICTATE THE COOLING WATER INLET TEMPERATURE. BY CONTROLLING THE COOLING WATER INLET TEMPERATURE AND OPERATING THE COOLING JACKETS AT FULL OPERATING CAPACITY, THE TEMPERATURE OF THE VESSEL CONTENTS WILL EFFECTIVELY BE CONTROLLED, AS INDICATED, MANUAL VALVES WILL BE INSTALLED ON EACH COOLING WATER JACKET FOR INITIAL BALANCING.
- CONTENTS OF THIS DOCUMENT ARE DANGEROUS WASTE PERMIT AFFECTING.
- VESSEL OVERFLOWS ARE EQUIPPED WITH A FLAPPER VALVE TO PREVENT AIR INLEAKAGE DURING NORMAL OPERATION.
- EXPLOSIVE GAS (I.E. HYDROGEN) MONITORING CAPABILITY TO BE PROVIDED VIA DISTRIBUTION RACK FOR WASH NOZZLES.
- ANTIFOAM TO BE ADDED VIA PLANT WASH CONNECTION.
- PRETREATMENT TO HLW WASTE TRANSFER LINE THREE WAY VALVES SHALL BE CAPABLE OF DIVERTING FLOW IN ALL TWO DIRECTIONS. NORMAL OPERATIONS WILL BE TO DIRECT THE WASTE TRANSFER INTO THE MPV AND THEN TO DIVERT THE LINE FLUSH BACK TO PRETREATMENT VIA THE OTHER TRANSFER LINE TO MINIMIZE WASTE DILUTION. EITHER OF THE 2 WASTE TRANSFER LINES DEDICATED TO AN MPV MAY BE USED TO RECEIVE CONCENTRATE FOLLOWED BY A LINE FLUSH WITH THE OTHER WASTE TRANSFER LINE USED TO RETURN THE LINE FLUSH.
- DELETED.
- TRANSFERS TO RLD-VSL-00008 ARE COORDINATED TO MAINTAIN THE SOLIDS PERCENT BELOW THE MAXIMUM LEVEL FOR RLD-VSL-00008.
- GLASS FORMERS ARE WETTED WITH DEMINERALIZED WATER FOR DUST MITIGATION.
- GLASS FORMERS ARE FED TO A CONVEYOR OR REJECT BIN THROUGH BOMB BAY (TRAP) DOORS.
- THE COMPONENTS SHOWN ON THIS DRAWING IN PHANTOM DO NOT REQUIRE INDEPENDENT QUALIFIED REGISTERED PROFESSIONAL ENGINEER ASSESSMENTS OF DESIGN OR INSTALLATION INSPECTION BY A QUALIFIED INSTALLATION INSPECTOR IN ACCORDANCE WITH THE DWP AND/OR WASHINGTON ADMINISTRATIVE CODE REQUIREMENTS.
- THE FOLLOWING CHANGES WERE INCORPORATED: DELETED HOLD 3, ADDED, REVISED, AND CHANGED NOTES, HOLDS, AND REFERENCES. DELETED MPV EQUIPMENT ITEMS, REVISED GFR TANKS AND CONNECTION INLET, REVISED PRETREATMENT OFFSHEET CONNECTION POINTS AND TEXT, ADDED "NOTE 17" TEXT, DELETED PWD TO OVERFLOWS, ISA TO VESSELS, AND AFR TO VESSELS CONNECTIONS. CHANGED "NOTE 19" IN VESSELS TO "NOTE 10".

HOLDS:

1-4. DELETED

REFERENCES:

- DELETED.
- 24590-HLW-3YD-HFP-00001, SYSTEM DESCRIPTION FOR HLW CONCENTRATE RECEIPT AND MELTER FEED PROCESS SYSTEMS (HCP AND HFP).
- DELETED.
- DELETED.
- DELETED.
- DELETED.
- DELETED.
- DELETED.
- DELETED.
- DELETED.
- DELETED.
- DELETED.
- DELETED.
- DELETED.

REV	DESCRIPTION	ORIGINATOR	DATE
4	ISSUED FOR PERMITTING USE. SEE NOTE 24 FOR CHANGES.	RR	10-28-02
3	MAJOR REVISION, SEE NOTE 22. ISSUED FOR PERMITTING USE.	RR	10-28-02
2	ISSUED FOR PERMITTING USE.	RR	10-28-02
1	PREVIOUS REVISION DID NOT HAVE A PE STAMP	DRH	10-28-02
0	ISSUED FOR PERMITTING USE.	DRH	10-28-02

REVISION HISTORY

PROJECT No. 24590
SITE HANFORD
AREA 200E
BUILDING No. 30

CONTRACT No. DE-AC27-08PVH156
RIVER PROTECTION PROJECT
WASTE TREATMENT PLANT
2435 STEVENS CENTER PLACE
RICHLAND, WA 99354

PROCESS FLOW DIAGRAM
HLW RECEIPT &
FEED PREPARATION
(SYSTEM HCP, GFR, & HFP)

SCALE: NTS
24590-HLW-M5-V17T-P0001

DATE: 08/21/2007 12:56:41 PM
REV: 4

PLEASE NOTE THAT SOURCE, SPECIAL NUCLEAR AND BYPRODUCT MATERIALS, AS DEFINED IN THE ATOMIC ENERGY ACT OF 1954 (AEA), ARE REGULATED AT THE U.S. DEPARTMENT OF ENERGY (DOE) FACILITIES EXCLUSIVELY BY DOE ACTING PURSUANT TO ITS AEA AUTHORITY. DOE ASSERTS, THAT PURSUANT TO THE AEA, IT HAS SOLE AND EXCLUSIVE RESPONSIBILITY AND AUTHORITY TO REGULATE SOURCE, SPECIAL NUCLEAR, AND BYPRODUCT MATERIALS AT DOE-OWNED NUCLEAR FACILITIES. INFORMATION CONTAINED HEREIN ON RADIOACTIVE IS PROVIDED FOR PROCESS DESCRIPTION PURPOSES ONLY.

ORIGINATOR	DATE
DRH	10-28-02
CHECKER	DATE
VALINT, THOMAS	10-28-02
APPROVER	DATE
DUNCAN, GARTH	10-29-02
REVIEWER	DATE
ROUSE, JAMES	10-29-02

CONTINGENT APPLICABLE TO ALARM? ☐ YES ☒ NO
ADP NO. 1/4
SAFETY SCREEN REQUIRED? ☐ YES ☒ NO
SAFETY SCREEN REQUIRED? ☐ YES ☒ NO

